

Reusable Handheld Electrolytes and Lab Technology for Humans (rHEALTH Sensor), Phase I

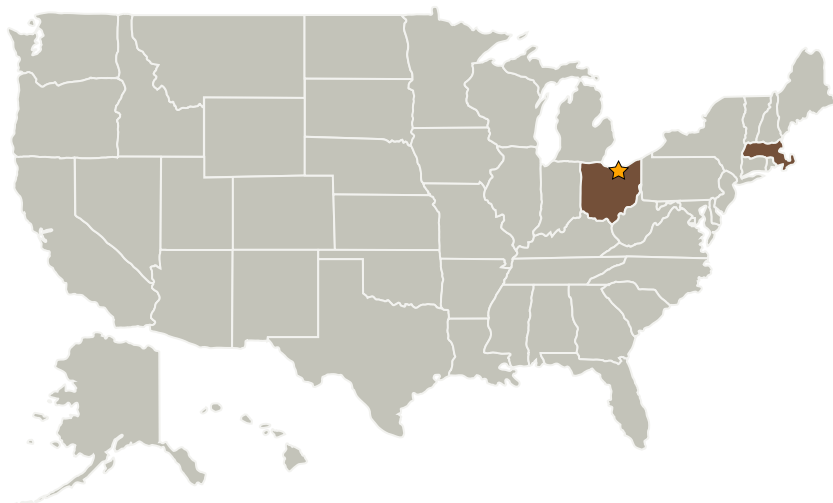
Completed Technology Project (2008 - 2008)



Project Introduction

The goal of rHEALTH sensor is a universal handheld sensor that can provide rapid, low-cost complete blood count (CBC) with differential, electrolyte analysis, and potential for advanced lab tests such as biomarker analysis all in one single microfluidic sensor. The first innovation is that the device can perform multiple lab measurements in a single microfluidic device. Most sensors can only perform one test at a time, such as CBC analysis. Adequate health monitoring requires at the minimum measurement of CBC and electrolytes. Second, our microfluidic chip is reusable because of its flow-through design. This minimizes cost and obviates the need for bulky consumables. Third, our sensor uses fluorescent analyte sensing dyes and fluorescence technology, which allows the sensor to measure a broad range of analytes. In Phase I, we plan to fabricate a prototype microfluidic sensor and test it for its ability to perform both CBC and electrolyte measurements. Upon proof-of-principle, in Phase II, our goal is to complete and deliver a prototype rHEALTH sensor for NASA to monitor astronaut health on a routine and cost-effective basis.

Primary U.S. Work Locations and Key Partners



Reusable Handheld Electrolytes and Lab Technology for Humans (rHEALTH Sensor), Phase I

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Reusable Handheld Electrolytes and Lab Technology for Humans
(rHEALTH Sensor), Phase I

Completed Technology Project (2008 - 2008)



Organizations Performing Work	Role	Type	Location
★ Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
The DNA Medicine Institute	Supporting Organization	Industry	Cambridge, Massachusetts

Primary U.S. Work Locations

Massachusetts	Ohio
---------------	------

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Eugene Chan

Technology Areas

Primary:

- TX09 Entry, Descent, and Landing
 - └ TX09.4 Vehicle Systems
 - └ TX09.4.6 Instrumentation and Health Monitoring for EDL